

## **ABSTRACT**

### **BACKGROUND AND OBJECTIVES**

Hypertension is one of the leading causes of death and disability among adults all over the world. It remains the major risk factor for coronary, cerebral and peripheral vascular disease. Essential hypertension comprises more than 90% of hypertension.

Hypertension is an emerging health problem in India. Raised serum uric acid has been reported to be associated with an increased risk of coronary heart disease and is commonly encountered with essential hypertension, even untreated hypertension, and type 2 diabetes, which are in turn associated with coronary heart disease.

In our study, an attempt has been made to study the prevalence of elevated uric acid levels in essential hypertension and the correlation between elevated uric acid levels and hypertensive target organ damage.

## **METHODS AND RESULTS:**

In this Hospital based study for the CORRELATION OF SERUM URIC ACID LEVELS IN ESSENTIAL HYPERTENSION 300 patients who attended the out-patient and in-patient at the Institute of Internal Medicine, Madras Medical College, Chennai were evaluated for Serum Uric Acid levels of which 150 were cases and 100 Were controls. The method of Caraway was used for the estimation of creatinine based on Jaffe's reaction.

## **INTERPRETATION AND CONCLUSION:**

The mean age for cases in this study is 52.74 years. The mean serum uric acid level in male is  $5.5 \pm 1.26$  while in female it is  $5.4 \pm 1.15$ . They have shown that the serum UA level was more in males when related to females.

In this study, serum uric acid does not correlate with Body Mass Index. The average serum UA level in hypertensive with BMI <25 and BMI  $\geq 25$  are 5.38 mg/dl and 5.4 mg/dl and the difference is not statistically significant.

The serum uric acid level is significantly higher in hypertensives when compared to normotensives. The average serum uric acid level in cases is 5.44mg/dl while in the control it is 3.96mg/dl. In this study, 87% of hypertensives has serum uric acid level >4mg/dl, while in controls 47% of subjects have serum uric acid level >4mg/dl.

There is no significant correlation between diabetes and serum uric acid level in this study. Smoking which is also a cardiovascular risk factor does not significantly influence serum uric acid level in this study.

Serum uric acid levels are significantly and independently related to increased risk of cardio-vascular mortality. In our study coronary arterial disease is seen in 44 hypertensive individuals. The mean serum uric acid level in cases with CAD is  $6 \pm 1.17$ . There is significant difference noticed among the cases with and without CAD.

In conclusion, we decided that there can be a direct relation between hypertension and hyperuricemia based on the results of our study. Hyperuricemia is found in 15.5% of hypertensives while none of the normotensives had hyperuricemia. Serum uric acid level is significantly elevated in cases with coronary artery disease. Serum uric acid is significantly elevated in essential hypertension. There is no correlation between serum uric acid with age, sex, BMI, diabetes and smoking.

### **Key Words**

Essential hypertension, hyperuricemia, BMI, diabetes mellitus, obesity, coronary artery disease, retinopathy, left ventricular hypertrophy, smoking, sex, SUA, serum uric acid, male, female, systolic BP, diastolic BP, renal failure, nephropathy, target organ damage